ABSTRACT

Methods for combining or splitting optical signals that include an odd channel set and an even channel set. The methods of combining or splitting are performed by subjecting the odd and even channel sets to a first filter that applies phase retardations corresponding with odd integer multiples of half a wavelength for each center wavelength associated with a selected one of the odd and even set of channels and with integer multiples of a full wavelength of each center wavelength associated with a remaining one of the odd set and the even set. The channel sets are then subjected to a second filter that applies phase retardations that are complementary to those experienced by the odd and even set of channels in the first filter. This complementary filtration has the effect of reducing dispersion. These methods may be used in optical devices applicable to a range of telecommunications applications, including optical multiplexers/demultiplexers and optical routers.

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